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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Complete if Known

Application Number	
Filing Date	
First Named Inventor	Ronald D McCallister
Art Unit	
Examiner Name	
Attorney Docket Number	2298-030

Sheet 1 of 3

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 5,778,029	07/07/1998	Kaufmann	
		US- 6,282,247	08/28/2001	Shen	
		US- 6,222,878	04/24/2001	McCallister, et al.	
		US- 6,512,800	01/28/2003	Amir, et al.	
		US- 2002/0193078A1	12/19/2002	Shearer, III, et al.	
		US- 5,721,756	02/24/1998	Liebetreu, et al.	
		US- 5,949,832	09/07/1999	Liebetreu, et al.	
		US- 6,442,217	08/27/2002	Cochran	
		US- 5,049,832	09/17/1991	Cavers	
		US- 2003/0063683A1	04/03/2003	Shearer, III, et al.	
		US- 2003/0063682A1	04/03/2003	Shearer, III	
		US- 6,141,390	10/31/2000	Cova	
		US- 5,867,065	02/02/1999	Leyendecker	
		US- 5,732,333	03/24/1998	Cox, et al.	
		US- 2003/0146787A1	08/07/2003	Hedberg, et al.	
		US- 2003/0156658A1	08/21/2003	Dartois	
		US- 2003/0123568A1	07/03/2003	Ophir, et al.	
		US- 2003/0179831A1	09/25/2003	Gupta, et al.	
		US- 2001/0005402A1	06/28/2001	Nagatani, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

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		Number-Kind Code ² (if known)			
		US- 5,113,414	05/12/1992	Karam, et al.	
		US- 2002/0064236A1	05/30/2002	Matsuoka, et al.	
		US- 6,240,278	05/29/2001	Midya, et al.	
		US- 6,236,837	05/22/2001	Midya	
		US- 4,910,698	03/20/1990	McCartney	
		US- 4,902,979	02/24/1990	Puckette, IV	
		US- 5,454,007	09/26/1995	Dutta	
		US- 4,888,557	12/19/1989	Puckette, IV, et al.	
		US- 4,878,029	10/31/1989	Saulnier, et al.	
		US- 4,270,179	05/26/1981	Sifford, et al.	
		US- 4,290,139	09/15/1981	Walsh	
		US- 4,422,175	12/20/1983	Bingham, et al.	
		US- 4,633,482	12/30/1989	Sari	
		US- 4,053,837	10/11/1977	Ryan, et al.	
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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		CAVERS, "The Effect of Quadrature Modulator and Demodulator Errors on Adaptive Digital Predistorters for Amplifier Linearization" IEEE Trans on Veh Tech, Vol46, #2, 05/97.	
		DING & ZHOU, "Effects of Even-order Nonlinear Terms on Power Amplifier Modeling and Predistortion Linearization" IEEE Transactions on Vehicular Technology, 08/2002	
		GRASS, BODHISATYA & MAHARATNA, "A Dual-Mode Synchronous/Asynchronous CORDIC Processor" IHP, IM Technologiepark, 2002.	
		OHLSSON, "Studies on Implementation of Digital Filters With High Throughput and Low Power Consumption" Institute of Technology, Dept of Electrical Engineering, P 61-73, 06/03.	
		RAICH, QIAN & ZHOU, "Digital Baseband Predistortion of Nonlinear Power Amplifiers Using Orthogonal Polynomials" Proc. ICASSP 2003) p689-692, Hong Kong China 04/2003.	
		GODAVARTI "Multiple Antennas in Wireless Communications" Array Signal Processing and Channel Capacity" University of Michigan, P 16-52, 2001.	
		"Pact Application Note: Adaptive Filter Based on the LMS-Algorithm"	
		CHOO "Mapping LMS Adaptive Filter IP Core to Multiplier-Array FPGA Architecture for High Channel-Density VOIP Line Echo Cancellation" CMP United Business Media, 2003.	
		WIDROW, MCCOOL & BALL, "The Complex LMS Algorithm" Information Systems Laboratory, Naval Undersea Center, Fleet Engineering Dept, 08/19/1974.	

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